

CLAIMS

1. A component positioning and securing bracket assembly, comprising:
 - a front rail, a rear rail, and a bottom rail to define a front, a rear, and a bottom boundary of the component positioning and securing bracket assembly, the front rail, the rear rail, and the bottom rail defining a structure into which is received the component;
 - a top plate for attaching to the component, the top plate including a keyed tail portion;
 - a tail receptacle for receiving the keyed tail portion;
 - a nose receptacle portion of the front rail for receiving a nose portion of the top plate;
 - a component connector to connect to a port of the component; and
 - a lever to provide leveraged motion, the leveraged motion effecting a connection of the port of the component and the component connector and securing the component in the component positioning and securing bracket,wherein the component positioning and securing bracket assembly is in an array of a plurality of components.
2. The component positioning and securing bracket assembly of claim 1, wherein the array of a plurality of components is one array of a plurality of arrays in an array chassis.
3. The component positioning and securing bracket assembly of claim 1, wherein the component is a computer component.
4. The component positioning and securing bracket assembly of claim 3, wherein the computer component is a hard drive.

5. The component positioning and securing bracket assembly of claim 2, wherein the component is a computer component and the plurality of arrays in the array chassis is a plurality of arrays of computer components in the array chassis of a computer system rack.

6. The component positioning and securing bracket assembly of claim 2, wherein when the leveraged motion provides horizontal motion to secure the component in the component positioning and securing bracket assembly within the one array of a plurality of arrays in an array chassis.

7. The component positioning and securing bracket assembly of claim 1, wherein the component connector is attached to the front rail and wherein the bottom rail defines a lower boundary of the component positioning and securing bracket assembly such that when the component is received in the structure defined by the front rail, the rear rail, and the bottom rail, the port of the component is aligned with the component connector.

8. The component positioning and securing bracket assembly of claim 1, wherein the component connector provides power to the component.

9. The component positioning and securing bracket assembly of claim 1, wherein the component connector provides power and data to the component.

10. In an array of a plurality of disk drive components, a disk drive positioning and securing bracket assembly, comprising:

a device surrounding component for holding a disk drive;

a forward mounting post attached to an array chassis;

a rear mounting post attached to the array chassis; and

a lever to provide leveraged movement to the disk drive,

wherein the device surrounding component includes a device positioning key and forward tabs, the device positioning key and forward tabs configured to be received in the rear mounting post and in the forward mounting post such that the device surrounding component having the disk drive therein is received in the rear mounting post and in the forward mounting post in a first direction of motion, and the lever provides leveraged movement in a second direction of motion to secure the disk drive.

11. The disk drive positioning and securing bracket assembly of claim 10, further comprising:

a power and data connector disposed within the forward mounting post; and

T-slots formed in the rear mounting post,

wherein when the lever provides leveraged movement in the second direction of motion to secure the disk drive, the device positioning key moves through the T-slots and a power and data port of the disk drive mates with the power and data connector.

12. The disk drive positioning and securing bracket assembly of claim 10, wherein the array of a plurality of disk drive components is disposed within an array chassis having a plurality of arrays of disk drive components.

13. The disk drive positioning and securing bracket assembly of claim 10, wherein the rear mounting post includes a keyway for receiving the device positioning key in the first direction of motion.

14. The disk drive positioning and securing bracket assembly of claim 11, wherein when the lever provides leveraged movement to secure the disk drive, the forward tabs are disposed within the forward mounting post and adjacent to the power and data connector.

15. The disk drive positioning and securing bracket assembly of claim 10, wherein the disk drive positioning and securing bracket assembly is constructed of materials including hard plastic and stainless steel alloy.

16. The disk drive positioning and securing bracket assembly of claim 10, wherein the first direction of motion is a vertical direction of motion and the second direction of motion is a horizontal direction of motion.

17. In an array chassis of a computer system rack, a disk drive array positioning and securing system, comprising:

a plurality of computer disk drives, the plurality of disk drives arranged in at least one linear array within the array chassis, each one of the plurality of disk drives including:

a disk drive bracket for positioning and securing the disk drive, and

a power and data connector for receiving a power and data connection port of the disk drive,

wherein the disk drive bracket for each one of the plurality of disk drives provides for movement of the disk drive in two directions of movement, and wherein each one of the plurality of disk drives is capable of being inserted into and removed from the linear array of disk drives independently of essentially every other one of the plurality of disk drives.

18. The disk drive array positioning and securing system of claim 17, wherein the plurality of disk drives is arranged in more than one linear array.

19. The disk drive array positioning and securing system of claim 17, wherein the disk drive bracket for each one of the plurality of disk drives comprises:

a front rail, a rear rail, and a bottom rail to define a front, a rear, and a bottom boundary of the disk drive bracket, the front rail, the rear rail, and the bottom rail defining a structure into which is received the disk drive in a first direction of movement;

a top plate attached to the disk drive;

a tail receptacle attached to the rear rail;

a nose receptacle attached to the front rail; and

a lever to provide leveraged movement in a second direction of movement, the second direction of movement resulting in the receiving of the power and data connection port of the disk drive by the power and data connector and securing the disk drive in the at least one linear array.

20. The disk drive array positioning and securing system of claim 17, wherein the disk drive bracket for each one of the plurality of disk drives comprises:

a disk drive surrounding component for holding the disk drive;

a forward mounting post attached to the array chassis;

a rear mounting post attached to the array chassis; and

a lever to provide leveraged movement of the disk drive,

wherein the disk drive surrounding component includes a device positioning key and forward tabs, the device positioning key and forward tabs configured to be received in the rear mounting post and in the forward mounting post such that the disk drive surrounding component having the disk drive therein is received in the rear mounting post and in the forward mounting post in a first direction of movement, and the lever provides the leveraged

movement in a second direction of movement to secure the disk drive in the at least one linear array.